CLAIMS

1 – Use of at least one unmodified polyolefin [polyolefin (P1)] as additive for a polyolefin composition (C2) comprising at least one polyolefin modified by grafting with acid and/or anhydride groups, which groups are optionally completely or partially neutralized by a neutralizing agent [polyolefin (P2)], for improving the level of at least one mechanical property of the polyolefin composition (C2) up to a level which is improved both with respect to that of the mechanical property of the polyolefin composition (C2) and with respect to that of the mechanical property of a polyolefin composition (C1) obtained by replacing, weight for weight in the polyolefin composition (C2), all the modified polyolefin (P2) by the unmodified polyolefin (P1).

2 – Use according to Claim 1, characterized in that the ratio by weight q_{w2} of the polyolefin (P2) to the polyolefin composition (C2) [(P2) : (C2)] is, before the addition of the polyolefin (P1), greater than 0.99.

3 – Use of at least one polyolefin modified by grafting with acid and/or anhydride groups, which groups are optionally completely or partially neutralized by at least one neutralizing agent [polyolefin (P2)], as additive for a polyolefin composition (C1) comprising at least one unmodified polyolefin [polyolefin (P1)] for improving the level of at least one mechanical property of the polyolefin composition (C1) up to a level which is improved both with respect to that of the mechanical property of the polyolefin composition (C1) and with respect to that of the mechanical property of a polyolefin composition (C2) obtained by replacing, weight for weight in the polyolefin composition (C1), all the unmodified polyolefin (P1) by the modified polyolefin (P2).

4 – Use according to Claim 3, characterized in that the ratio by weight q_{w1} of the polyolefin (P1) to the polyolefin composition (C1) [(P1) : (C1)] is, before the addition of the polyolefin (P2), greater than 0.995.

5 – Use according to any one of Claims 1 to 4, characterized in that the polyolefin (P1) is a polypropylene.

6 – Use according to any one of Claims 1 to 5, characterized in that the polyolefin (P2) is a polypropylene.

7 – Use according to any one of Claims 1 to 6, characterized in that the mechanical property relates at least to the low-speed mechanical behaviour.

8 – Use according to Claim 7, characterized in that the mechanical property comprises the tensile elastic modulus.

9 – Use according to Claim 7 or 8, characterized in that the mechanical property comprises the elongation at break.

10 – Use according to any one of Claims 1 to 9, characterized in that the mechanical property relates at least to the operating temperature range.

11 – Use according to Claim 10, characterized in that the mechanical property comprises the softening temperature in the Vicat 10N test.

12 – Use according to any one of Claims 1 to 11, characterized in that the mechanical property relates at least to the high-speed mechanical behaviour.

13 – Use according to Claim 12, characterized in that the mechanical property comprises the impact strength and/or the peak force in the instrumented falling weight test.

14 – Use according to any one of Claims 1 to 13, characterized in that the mechanical property relates at least to the change in the mechanical behaviour of the material over time.

15 – Use according to Claim 14, characterized in that the mechanical property comprises the tensile elastic modulus after 100 h under a stress of 10 MPa.

16 – Use according to any one of Claims 1 to 6, characterized in that :

- the polyolefin (P1) is a propylene homopolymer,
- the polyolefin (P2) is a propylene homopolymer, the acid and/or anhydride groups of which are not neutralized, and
- the mechanical property relates either at least to the low-speed mechanical behaviour or at least to the operating temperature range or at least to the change in the mechanical behaviour over time.

17 – Use according to any one of Claims 1 to 6, characterized in that :

- the polyolefin (P1) is a propylene homopolymer,
- the polyolefin (P2) is a propylene homopolymer, the acid and/or anhydride groups of which are completely or partially neutralized, and
- the mechanical property relates either at least to the low-speed mechanical behaviour or at least to the operating temperature range or at least to the high-speed mechanical behaviour.

18 – Use according to any one of Claims 1 to 6, characterized in that :

- the polyolefin (P1) is a random propylene copolymer,
- the polyolefin (P2) is a random propylene copolymer, the acid and/or anhydride groups of which are not neutralized, and
- the mechanical property relates at least to the low-speed mechanical behaviour.

19 – Use according to any one of Claims 1 to 6, characterized in that :

- the polyolefin (P1) is a random propylene copolymer,
- the polyolefin (P2) is a random propylene copolymer, the acid and/or anhydride groups of which are completely or partially neutralized, and
- the mechanical property relates at least to the high-speed mechanical behaviour.

20 – Use according to any one of Claims 1 to 19, characterized in that the ratio by weight r_w of the polyolefin (P1) to the polyolefin (P2) [(P1) : (P2)] is greater than 8.

21 – Use according to any one of Claims 1 to 20, characterized in that the ratio by weight r_w of the polyolefin (P1) to the polyolefin (P2) [(P1) : (P2)] is less than 35.

22 – Process for the preparation of a polyolefin composition which is improved with respect to a preexisting polyolefin composition (C2) comprising

at least one polyolefin modified by grafting with acid and/or anhydride groups which are optionally completely or partially neutralized by at least one neutralizing agent [polyolefin (P2)], the said process being carried out for the purpose of improving the level of at least one mechanical property of the preexisting polyolefin composition (C2) up to a level which is improved both with respect to that of the mechanical property of the preexisting polyolefin composition (C2) and with respect to that of the mechanical property of a polyolefin composition (C1) obtained by replacing, weight for weight in the preexisting polyolefin composition (C2), all of the modified polyolefin (P2) by at least one unmodified polyolefin [polyolefin (P1)] and the said process comprising the addition of the unmodified polyolefin (P1) to the preexisting polyolefin composition (C2) during the actual preparation of the said composition or after having prepared the latter.

23 – Process for the preparation of a polyolefin composition which is improved with respect to a preexisting polyolefin composition (C1) comprising at least one unmodified polyolefin [polyolefin (P1)], the said process being carried out for the purpose of improving the level of at least one mechanical property of the preexisting polyolefin composition (C1) up to a level which is improved both with respect to that of the mechanical property of the preexisting polyolefin composition (C1) and with respect to that of the mechanical property of a polyolefin composition (C2) obtained by replacing, weight for weight in the preexisting polyolefin composition (C1), all of the unmodified polyolefin (P1) by at least one polyolefin modified by grafting with acid and/or anhydride groups which are optionally completely or partially neutralized by at least one neutralizing agent [polyolefin (P2)] and the said process comprising the addition of the modified polyolefin (P2) to the preexisting polyolefin composition (C1) during the actual preparation of the said composition or after having prepared the latter.

24 – Process according to Claim 22 or 23, characterized in that the polyolefin (P1) is a polypropylene.

25 – Process according to any one of Claims 22 to 24, characterized in that the polyolefin (P2) is a polypropylene.

26 – Semi-finished or finished article comprising an improved polyolefin composition prepared by the process according to any one of Claims 22 to 25.